

C L A I M S

What is claimed is:

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1. A diner-driven automated restaurant ordering and payment system comprising, a server in wireless communication with

a kitchen order display,

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a pay station comprising billing and payment means, and a plurality of portable wireless menu means comprising

a display of food offerings, each offering having a bill associated therewith,

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means for transmitting wireless messages containing a selection of the food offerings to the wireless server,

wherein each diner is provided with a portable wireless menu means which:

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a) transmits a wireless message containing a selection of the food offerings to said server, which transmits the message to the kitchen order display, and

b) transmits a compute commanding to the server, which transmits the compute command to the payment station to

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compute a bill for the total food offerings selected.

2. A diner-driven interactive restaurant automation system as in Claim 1, wherein portable wireless menu means comprises an E-menu comprising a touch activated LCD screen.

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3. A diner-driven interactive restaurant automation system as in Claim 2, wherein the diner's E-menu further comprises a picture of the food offerings.

10 4. A diner-driven interactive restaurant automation system as in Claim 2, wherein the diner's E-menu further comprises a touch screen display of all the food offerings selected by the diner.

15 5. A diner-driven interactive restaurant automation system as in Claim 2, wherein the diner's E-menu further comprises display of the bill for the diner's selection of food offerings.

20 6. A diner-driven interactive restaurant automation system as in Claim 2, wherein the E-menu further comprises a display of the bill for the total of the food offerings

selected by another diner (and collective table order for all diners).

7. A diner-driven interactive restaurant automation system
5 as in Claim 2, wherein the diner's E-menu further comprises means for permitting payment assumption for the bill of another diner.

8. A diner-driven interactive restaurant automation system
10 as in Claim 2, wherein the diner's E-menu further comprises a display of the nutritional content of the food offerings.

9. A diner-driven interactive restaurant automation system
as in Claim 1, wherein the payment station further
15 comprises means for making a credit card payment.

10. A diner-driven interactive restaurant automation
system as in Claim 1, wherein the kitchen order display
further comprises means for indicating that preparation is
20 completed for a selected food offering and the food offering is ready to be served.

11. A diner-driven interactive restaurant automation system as in Claim 1, wherein the kitchen order display further comprises a touch screen with a touch activated location for a "food preparation started" message
- 5 associated with a selected food offering, operable to transmit said message to the RAS compute server from which the diner can check the status of food preparation via an E-Menu.
- 10 12. A diner-driven interactive restaurant automation system as in Claim 1, wherein the E-menu further comprises means for displaying advertising.
13. A diner-driven interactive restaurant automation
- 15 system as in Claim 1, wherein the E-menu further comprises a low battery indicator.
14. A diner-driven interactive restaurant automation system as in Claim 1, wherein the E-menu further comprises
- 20 battery-charging contacts.

15. A diner-driven interactive restaurant automation system as in Claim 1, wherein the E-menu further comprises brightness/contrast controls.
- 5 16. A diner-driven interactive restaurant automation system as in Claim 1, wherein the E-menu further comprises means for accessing the Internet through the wireless server.
- 10 17. The diner-driven interactive restaurant automation system as in Claim 16, wherein the means for accessing the Internet through the wireless server comprises a wireless network interface embedded in the E-menu.
- 15 18. A diner-driven interactive restaurant automation system as in Claim 1, wherein the E-menu further comprises means for checking the status of the preparation of a food offering selected on the E-menu.
- 20 19. A waiter call system for the restaurant automation system of Claim 1, comprising a table call unit comprising a plurality of service call buttons, each associated with a

particular service, which operate to illuminate a plurality of service call lights.

20. A waiter call system as in Claim 19, wherein the table
5 call unit further comprises a decorative component illuminated by the service call lights.

21. A waiter call system as in Claim 19, wherein table
call unit further comprises a timer display displaying the
10 time elapsed since activation of a service call button.

22. A waiter call system as in claim 19, wherein the table
call unit further comprises a table ID signal transmitter
and the waiter call system further comprises a call status
15 display which displays the table ID and service requests for that table.

23. A reception management system comprising the automated
restaurant system of Claim 1, said server further
20 comprising a reception management system application which controls a reception management display, wherein the reception management system application comprises means for

entering and displaying table reservations, and means for calculating the expected wait time for an occupied table.

24. The reception management system of Claim 23, wherein
5 the reception management system display further comprises means for a diner to enter into a queue for a table for a particular size party.

25. The reception management system of Claim 24, further
10 comprising a reservation display, displaying existing reservations, and means for entering new reservations.

26. The diner-driven automated restaurant system of Claim
1, wherein the automated ordering system server application
15 further comprises means for transmitting a "selection canceled" message to the kitchen order display, which further comprises means to display said message.

27. The diner-driven automated restaurant system of Claim
20 1, wherein the restaurant server further comprises a menu modify function which is operable through a Menu Modify screen to upgrade the food offerings and the bill associated therewith, on the menus.

28. The diner-driven automated restaurant system of Claim 27, wherein the menu modify screen is a touch screen.

29. A restaurant management system comprising the diner-
5 driven automated restaurant system of Claim 1, wherein the server further comprises data storage of the messages transmitted on the automated restaurant system, to permit later review of the data for evaluating the restaurant.

10 30. A restaurant management system comprising a central services center for a plurality of restaurant ordering and payment systems each having restaurant compute servers as in Claim 1, further comprising a central services center
15 compute server in communication with said plurality of restaurant servers, and maintaining a data store of information received from said restaurant systems.

31. The restaurant management system of Claim 30, further comprising means to analyze said data.

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32. A diner's personalized restaurant benefits system comprising the restaurant management system of Claim 30,

and means for entering a diner ID and means for assigning benefits to the diner ID.

33. A diner's personalized restaurant benefits system as
5 in Claim 32, further comprising means for a diner to request an ID.

34. A diner's personalized restaurant benefits system as
in Claim 32, further comprising means for directing
10 advertising messages to menus according to the data store of information related to the diner ID.

35. A diner-driven automated restaurant ordering and payment system as in Claim 1, further comprising means to
15 print the food offering selections transmitted from the menus.

36. A diner-driven automated restaurant ordering and payment system as in Claim 1, further comprising means to
20 collate the orders received from particular table.

37. A diner-driven automated restaurant ordering and payment system as in Claim 36, further comprising means to collate a late order with the other orders from the table.

5 38. A diner-driven automated restaurant ordering and payment system as in Claim 1, further comprising means to remove old orders from the kitchen order display.

39. A diner-driven automated restaurant ordering and
10 payment system as in Claim 1, further comprising means for a diner to assume confirmation of an order placed on another menu.

40. A diner-driven automated restaurant ordering and
15 payment system as in Claim 1, said menu further comprising a filtering means for selecting among categories of food offerings.

41. A reception management system as in Claim 23, further
20 comprising means to associate a table ready message with a particular table.

42. A reception management system as in Claim 41, further comprising means to assigning a reservation to an open table, and means for communication the assignment to the diners.

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43. A reception management system as in Claim 42, wherein said means of communication comprises flashing lights.

44. A reception management system as in Claim 41, further
10 comprising means for directing diners associated with the reservation to the table assigned to the reservation.

45. A reception management system as in Claim 44, wherein the means for directing comprises flashing lights located
15 in the vicinity of the table.

46. A reception management system as in Claim 44, wherein the means for directing comprises a map.

20 47. The diner-driven automated restaurant system of Claim 1, wherein the automated ordering system server application further comprises means for transmitting fast and easy updates to the menu means.

48. The diner-driven automated restaurant system of Claim 1, wherein the automated ordering system server application further comprises means for customizing the design of the menu.

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49. The diner-driven automated restaurant ordering and payment system of Claim 35, further comprising a touch screen print command.

10 50. A reception management system as in Claim 23, further comprising means to convey the plot of the tables, and means for a diner to select a particular table.

51. An order automation system comprising, in combination:

15 (a) a computer server having a memory unit for storing menu data comprising menu items which may be ordered;

(b) a first transmitting and receiving device (T/R device) connected to said server for transmitting said menu data and receiving order commands; and

20 (c) a plurality of menu tablets each having a graphic display, input means for receiving order commands from a user and a second transmitting and receiving device (T/R device), said second T/R device, in communication with said

first T/R device, for receiving said menu data from, and transmitting said order commands to, said server; the improvement wherein the input means is a touch activated LCD screen.

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52. An order automation system of Claim 51, wherein said menu data further comprises a price for each menu item.

53. The order automation system of Claim 52, further comprising a pay station, in communication with said server, for receiving price tally commands; and said second T/R transmitting price tally commands from said tablets to said server.

15 54. The order automation system of Claim 53, further comprising a central facility comprising a central computer in communication with at least one order automation system, said central computer having a memory unit for storing the order commands from a number of order automation systems,
20 and payment information associated therewith.

55. The order automation system of Claim 54, wherein the central computer memory unit further stores payment information associated with the order commands.

5 56. The order automation system of Claim 51, wherein the graphic display transmitted from the server comprises pictures of the menu items.

57. The order automation system of Claim 51, wherein the
10 graphic display transmitted from the server comprises compatibility information for the menu items.

58. The order automation system of Claim 51, further comprising a facility's order display in communication with
15 said server, for receiving and displaying order commands received from the computer server.

59. The order automation system of Claim 58, wherein said facility's order display further comprises a graphic
20 display, and a third transmitting and receiving device (T/R device) in communication with said first T/R device, for receiving said order commands, and transmitting an order work started command to the server.

60. The order automation system of Claim 58, wherein said facility's order display further comprises a third transmitting and receiving device (T/R device) in communication with said second T/R device, for receiving
5 said order commands, and transmitting a "food preparation started" command to the server.

61. The order automation system of Claim 51, wherein the menu tablet further comprises a low battery indicator.
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62. The order automation system of Claim 51, wherein the menu tablet further comprises battery charging contacts.

63. The order automation system of Claim 51, wherein the
15 menu tablet further comprises brightness/contrast controls.

64. The order automation system of Claim 51, wherein the menu tablet further comprises means for viewing the Internet connection of the server.
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65. An order automation system comprising, in combination:
(a) a computer server having a memory unit for storing menu data comprising menu items which may be ordered;

(b) a first transmitting and receiving device (T/R device) connected to said server for transmitting said menu data and receiving order commands; and

(c) a plurality of menu tablets each having a graphic display, input means for receiving order commands from a user and a second transmitting and receiving device (T/R device), said second T/R device, in communication with said first T/R device, for receiving said menu data from, and transmitting said order commands to, said server;

the improvement wherein the menu tablets comprise means for sensing the location of the tablet within the facility.

66. An order automation system of Claim 65, wherein said menu data further comprises a price for each menu item.

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67. The order automation system of Claim 66, further comprising a pay station, in communication with said server, for receiving price tally commands; and said second T/R transmitting price tally commands from said tablets to said server.

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68. The order automation system of Claim 66, further comprising a central facility comprising a central computer

in communication with at least one order automation system,
said central computer having a memory unit for storing the
order commands from a number of order automation systems,
and payment information associated therewith.

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69. The order automation system of Claim 67, wherein the
central computer memory unit further stores payment
information associated with the order commands.

10 70. The order automation system of Claim 65, wherein the
graphic display transmitted from the server comprises
pictures of the menu items.

71. The order automation system of Claim 65, wherein the
15 graphic display transmitted from the server comprises
compatibility information for the menu items.

72. The order automation system of Claim 65, further
comprising a facility's order display in communication with
20 said server, for receiving and displaying order commands
received from the computer server.

73. The order automation system of Claim 62, wherein said facility's order display further comprises a graphic display, and a third transmitting and receiving device (T/R device) in communication with said first T/R device, for
5 receiving said order commands, and transmitting a "food preparation started" command to the server.

74. The order automation system of Claim 62, wherein said facility's order display further comprises a third
10 transmitting and receiving device (T/R device) in communication with said second T/R device, for receiving said order commands, and transmitting a "food preparation started" command to the server.

15 75. The order automation system of Claim 65, wherein the menu tablet further comprises a low battery indicator.

76. The order automation system of Claim 51, wherein the menu tablet further comprises battery charging contacts.
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77. The order automation system of Claim 65, wherein the menu tablet further comprises brightness/contrast controls.

78. The order automation system of Claim 65, wherein the menu tablet further comprises means for viewing the Internet connection of the server.

5 79. An order automation system comprising, in combination:
(a) a computer server having a memory unit for storing menu data comprising menu items which may be ordered;
(b) a first transmitting and receiving device (T/R device) connected to said server for transmitting said menu data
10 and receiving order commands; and
(c) a plurality of menu tablets each having a graphic display, input means for receiving order commands from a user and a second transmitting and receiving device (T/R device), said second T/R device, in communication with said
15 first T/R device, for receiving said menu data from, and transmitting said order commands to, said server;
the improvement wherein the menu tablets have no CPU.

80. An order automation system of Claim 79, wherein said
20 menu data further comprises a price for each menu item.

81. The order automation system of Claim 80, further comprising a pay station, in communication with said

server, for receiving price tally commands; and said second T/R transmitting price tally commands from said tablets to said server.

5 82. The order automation system of Claim 81, further comprising a central facility comprising a central computer in communication with at least one order automation system, said central computer having a memory unit for storing the order commands from a number of order automation systems,
10 and payment information associated therewith.

83. The order automation system of Claim 82, wherein the central computer memory unit further stores payment information associated with the order commands.

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84. The order automation system of Claim 79, wherein the graphic display transmitted from the server comprises pictures of the menu items.

20 85. The order automation system of Claim 79, wherein the graphic display transmitted from the server comprises compatibility information for the menu items.

86. The order automation system of Claim 79, further comprising a facility's order display in communication with said server, for receiving and displaying order commands received from the computer server.

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87. The order automation system of Claim 86, wherein said facility's order display further comprises a graphic display, and a third transmitting and receiving device (T/R device) in communication with said first T/R device, for
10 receiving said order commands, and transmitting an order work started command to the server.

88. The order automation system of Claim 86, wherein said facility's order display further comprises a third
15 transmitting and receiving device (T/R device) in communication with said second T/R device, for receiving said order commands, and transmitting a "food preparation started" command to the server.

20 89. The order automation system of Claim 79, wherein the menu tablet further comprises a low battery indicator.

90. The order automation system of Claim 79, wherein the menu tablet further comprises battery charging contacts.

91. The order automation system of Claim 79, wherein the
5 menu tablet further comprises brightness/contrast controls.

92. The order automation system of Claim 79, wherein the menu tablet further comprises means for viewing the Internet connection of the server.

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93. A waiter call system as in claim 19, wherein the table call unit further comprises a table ID signal RFID swipe device, for electro-magnetically affixing a table ID to the E-Menu.

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94. A diner-driven interactive restaurant automation system as in Claim 2, wherein the diner's E-menu further comprises a display of the chef's background.

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95. A diner-driven interactive restaurant automation system as in Claim 2, wherein the diner's E-menu further comprises a display of the restaurant history.

96. The order automation system of Claim 60, and wherein the diner can check the status of food preparation via an E-Menu.

5 97. The order automation system of Claim 74, and wherein the diner can check the status of food preparation via an E-Menu.

98. The order automation system of Claim 88, and wherein
10 the diner can check the status of food preparation via an E-Menu.

99. A waiter call system for a restaurant comprising a table call unit comprising a plurality of service call
15 buttons, each associated with a particular service, which operate to illuminate a plurality of service call lights.

100. A waiter call system as in Claim 99, wherein the table call unit further comprises a decorative component
20 illuminated by the service call lights.

101. A waiter call system as in Claim 99, wherein table call unit further comprises a timer display displaying the time elapsed since activation of a service call button.

5 102. A waiter call system as in Claim 99, wherein the table call unit further comprises a table ID signal transmitter and the waiter call system further comprises a call status display which displays the table ID and service requests for that table.

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103. A waiter call system as in Claim 99, further comprising a server in wireless communication with the table call unit.

15 104. A diner-driven interactive restaurant automation system as in Claim 2, wherein the E-menu further comprises a means to disable the order send function.

105. A diner-driven interactive restaurant automation
20 system as in Claim 2, wherein the E-menu further comprises means for requesting a separate check for the items ordered on that E-menu.

106. A diner-driven interactive restaurant automation system as in Claim 2, wherein two or more separate windows may be simultaneously viewed in the screen of the E-menu.

5 107. The reception management system of Claim 25, further comprising means for calculating and displaying the expected wait time for an occupied table.

108. In an automated restaurant ordering and payment
10 system as in Claim 1, means for adjusting a bill.

109. An automated restaurant ordering and billing system as in Claim 2, wherein said LCD screen is foldable.

110. An order automation system as in Claim 51, wherein said LCD screen is foldable.

15 111. An order automation system as in Claim 65, wherein said menu tablet comprises a foldable LCD screen.

112. An order automation system as in Claim 79, wherein said menu tablet comprises a foldable LCD screen.